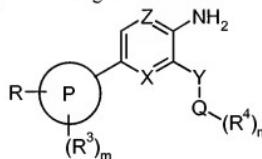


**Amendment to the Claims:**

This listing of claims will replace all previous versions, and listings, of claims in this application.

**Listing of Claims:**

1. (Currently amended) A compound having the formula I



wherein:

Z is N;

Y is CONR<sup>5</sup>, NR<sup>5</sup>CO, SO<sub>2</sub>NR<sup>5</sup>, NR<sup>5</sup>SO<sub>2</sub>, CH<sub>2</sub>NR<sup>5</sup>, NR<sup>5</sup>CONR<sup>5</sup>, CH<sub>2</sub>CO, CO or CH<sub>2</sub>O;

X is [[CH or] N];

P is phenyl or a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms selected from N, O or S and said phenyl ring or 5 or 6 membered heteroaromatic ring may optionally be fused with a 5 or 6 membered saturated, partially saturated or unsaturated ring containing atoms independently selected from C, N, O or S;

Q is C<sub>1~6</sub>alkyl, C<sub>2~6</sub>alkenyl or C<sub>2~6</sub>alkynyl;

R is CHO, fluoromethoxy, difluoromethoxy, trifluoromethoxy; C<sub>0~6</sub>alkyl(SO<sub>2</sub>)NR<sup>1</sup>R<sup>2</sup>, OC<sub>0~6</sub>alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>2</sup>, OC<sub>1~6</sub>alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>2</sup>, C<sub>1~6</sub>alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>2</sup>, C<sub>0~6</sub>alkylINR<sup>4</sup>(SO<sub>2</sub>)R<sup>2</sup>, OC<sub>1~6</sub>alkylINR<sup>4</sup>(SO<sub>2</sub>)R<sup>2</sup>, C<sub>0~6</sub>alkylINR<sup>4</sup>(SO<sub>2</sub>)NR<sup>1</sup>R<sup>2</sup>, OC<sub>1~6</sub>alkylINR<sup>4</sup>(SO<sub>2</sub>)R<sup>2</sup>; C<sub>0~6</sub>alkyl(SO<sub>2</sub>)C<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>, OC<sub>0~6</sub>alkyl(SO<sub>2</sub>)C<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>, C<sub>0~6</sub>alkyl(SO<sub>2</sub>)C<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>; OC<sub>1~6</sub>alkyl(SC<sub>1~6</sub>alkyl)NR<sup>4</sup>R<sup>2</sup>, C<sub>0~6</sub>alkylSC<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>, OC<sub>1~6</sub>alkylSC<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>; OC<sub>1~6</sub>alkylOC<sub>1~6</sub>alkyl, C<sub>1~6</sub>alkylOC<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>, OC<sub>1~6</sub>alkylOC<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>; C<sub>0~6</sub>alkylICONR<sup>10</sup>R<sup>11</sup>, OC<sub>0~6</sub>alkylICONR<sup>1</sup>R<sup>2</sup>, OC<sub>1~6</sub>alkylINR<sup>4</sup>R<sup>2</sup>, C<sub>0~6</sub>alkylINR<sup>10</sup>(CO)R<sup>11</sup>, OC<sub>1~6</sub>alkylINR<sup>4</sup>(CO)R<sup>2</sup>, C<sub>0~6</sub>alkylINR<sup>11</sup>(CO)R<sup>10</sup>, C<sub>0~6</sub>alkylICOR<sup>11</sup>, OC<sub>1~6</sub>alkylICOR<sup>1</sup>;

$C_{0-6}$ alkylNR<sup>10</sup>R<sup>11</sup>,  $C_{0-6}$ alkylO(CO)R<sup>11</sup>, OC<sub>1-6</sub>alkylO(CO)R<sup>11</sup>,  $C_{0-6}$ alkyl(C(NR<sup>10</sup>)NR<sup>10</sup>)R<sup>11</sup>,  $C_{0-6}$ alkyl(C(NR<sup>11</sup>)NR<sup>10</sup>), OC<sub>1-6</sub>alkyl(C(NR<sup>11</sup>)NR<sup>10</sup>)R<sup>2</sup>,  $C_{0-6}$ alkylNR<sup>10</sup>(CO)OR<sup>11</sup>, OC<sub>1-6</sub>alkylNR<sup>11</sup>(CO)OR<sup>2</sup>,  $C_{0-6}$ alkylNR<sup>11</sup>(CO)OR<sup>2</sup>,  $C_{0-6}$ alkyl(CO)(CO)NR<sup>11</sup>R<sup>2</sup>,  $C_{0-6}$ alkyl(CO)(CO)NR<sup>11</sup>(CO)NR<sup>11</sup>R<sup>2</sup>, NR<sup>11</sup>(CO)(CO)NR<sup>11</sup>R<sup>2</sup>, NR<sup>11</sup>(CO)(CO)NR<sup>11</sup>R<sup>2</sup>, OR<sup>12</sup> or SO<sub>2</sub>R<sup>1</sup>; R<sup>1</sup> and R<sup>2</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylheterocycloalkyl, C<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl, wherein any C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylheterocycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl may be substituted by one or more A;

R<sup>1</sup> and R<sup>2</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>3</sup> is independently selected from halogen, nitro, CHO, C<sub>0-6</sub>alkylCN, OC<sub>1-6</sub>alkylCN, C<sub>0-6</sub>alkylOR<sup>6</sup>, OC<sub>1-6</sub>alkylOR<sup>6</sup>, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, C<sub>0-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylOC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>OR<sup>7</sup>, C<sub>0-6</sub>alkylCO<sub>2</sub>R<sup>6</sup>, OC<sub>1-6</sub>alkylCO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, O(CO)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)OR<sup>7</sup>, NR<sup>6</sup>(CO)NR<sup>6</sup>R<sup>7</sup>, O(CO)OR<sup>6</sup>, O(CO)R<sup>6</sup>, C<sub>0-6</sub>alkylCOR<sup>6</sup>, OC<sub>1-6</sub>alkylCOR<sup>6</sup>, NR<sup>6</sup>(CO)(CO)R<sup>6</sup>, NR<sup>6</sup>(CO)(CO)NR<sup>6</sup>R<sup>7</sup>, SR<sup>6</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)R<sup>7</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>3</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>0-6</sub>alkylISO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylISO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylSOR<sup>6</sup>, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl, wherein any C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl may be optionally substituted by one or more A;

R<sup>4</sup> is independently selected from halogen, nitro, CHO, CN, OC<sub>1-6</sub>alkylCN, OR<sup>6</sup>, OC<sub>1-6</sub>alkylOR<sup>6</sup>, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>OR<sup>7</sup>, CO<sub>2</sub>R<sup>6</sup>, OC<sub>1-6</sub>alkylCO<sub>2</sub>R<sup>6</sup>, CONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, NR<sup>6</sup>(CO)R<sup>7</sup>, O(CO)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)OR<sup>7</sup>, NR<sup>6</sup>(CO)NR<sup>6</sup>R<sup>7</sup>, O(CO)OR<sup>6</sup>, O(CO)R<sup>6</sup>, COR<sup>6</sup>, OC<sub>1-6</sub>alkylCOR<sup>6</sup>, NR<sup>6</sup>(CO)(CO)R<sup>6</sup>,

NR<sup>6</sup>(CO)(CO)NR<sup>6</sup>R<sup>7</sup>, SR<sup>6</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl|NR<sup>6</sup>(SO<sub>2</sub>)R<sup>7</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>2</sub>R<sup>6</sup>, NR<sup>6</sup>(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>, SOR<sup>6</sup>, C<sub>3-6</sub>cycloalkyl, phenyl, a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S, or a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S which heterocyclic group may be saturated or unsaturated, and said phenyl ring or 5 or 6 membered heteroaromatic ring or 5 or 6 membered heterocyclic ring may optionally be fused with a 5 or 6 membered saturated, partially saturated or unsaturated ring containing atoms independently selected from C, N, O or S wherein any C<sub>3-6</sub>cycloalkyl, phenyl, 5 or 6 membered heteroaromatic ring with one or two heteroatoms selected independently from N, O, or S or a 5 or 6 membered heterocyclic containing one or two heteroatoms selected independently from N, O, or S; may be optionally be substituted by one or more A;

m is 0, 1, 2, 3 or 4;

n is 0, 1, 2, 3 or 4;

R<sup>5</sup> is hydrogen or C<sub>1-6</sub>alkyl

R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl and C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>6</sup> and R<sup>7</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A and wherein a CH<sub>2</sub> group may optionally be replaced by a CO group; R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl;

R<sup>8</sup> and R<sup>9</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>10</sup> is hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl or C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>11</sup> is C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>10</sup> and R<sup>11</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>12</sup> is a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A; wherein any C<sub>1</sub>-6alkyl, C<sub>2</sub>-6alkenyl, C<sub>2</sub>-6alkynyl, C<sub>0</sub>-6alkylC<sub>3</sub>-6cycloalkyl, C<sub>0</sub>-6alkylheterocycloalkyl, C<sub>0</sub>-6alkylaryl, C<sub>0</sub>-6alkylheteroaryl defined under R<sup>5</sup> to R<sup>12</sup> may be substituted by one or more A; A is halo, oxo (=O), nitro, CHO, CN, OR<sup>6</sup>, C<sub>1</sub>-6alkyl, C<sub>2</sub>-6alkenyl, C<sub>2</sub>-6alkynyl, C<sub>0</sub>-6alkylC<sub>3</sub>-6cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, C<sub>0</sub>-6alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1</sub>-6alkylNR<sup>6</sup>R<sup>7</sup>, CO<sub>2</sub>R<sup>8</sup>, CONR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)R<sup>6</sup>, O(CO)R<sup>6</sup>, COR<sup>6</sup>, SR<sup>6</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>3</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup> or SOR<sup>6</sup>; as a free base or a pharmaceutically acceptable salt, solvate or solvate of a salt thereof.

Claim 2 (cancelled).

3. (Currently amended) A compound according to claim 1[[2]], wherein R<sup>1</sup> and R<sup>2</sup> in C<sub>0</sub>-6alkyl(SO<sub>2</sub>)NR<sup>1</sup>R<sup>2</sup> together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S.

4. (Original) A compound according to claim 3, wherein said heterocyclic ring comprises one or more N heteroatoms and said heterocyclic ring is optionally substituted by A, preferably a C<sub>1</sub>-6alkyl.

5. (Currently amended) A compound according to any one of claims [[1 to 4]] 1, 3 or 4, wherein Y is CONR<sup>5</sup>; R<sup>5</sup> is hydrogen; Q is C<sub>1</sub>-6alkyl; R<sup>4</sup> is selected from: phenyl, 5 or 6 membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S

or a 5 or 6 membered heterocyclic ring containing one or two heteroatoms selected independently from N, O, or S which heterocyclic group may be saturated or unsaturated, CN, OR<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>, NR<sup>6</sup>(CO)R<sup>7</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, and CONR<sup>6</sup>R<sup>7</sup>; and n is 1; said phenyl or 5 or 6 membered heterocyclic ring optionally substituted by A.

6. (Original) A compound according to claim 5, wherein A is selected from OR<sup>6</sup>, C<sub>1-6</sub>alkyl, oxo (=O) and nitro; and R<sup>6</sup> and/or R<sup>7</sup> is selected from C<sub>1-6</sub>alkyl and hydrogen.

7. (Currently amended) A compound which is

3-Amino-N-(2-cyanoethyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-N-(3-amino-3-oxopropyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-N-(2-nitrobenzyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-N-(2-methoxybenzyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-N-(3-morpholin-4-ylpropyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

3-Amino-N-[3-(4-methylpiperazin-1-yl)propyl]-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide;

as a free base or a pharmaceutically acceptable salt, solvate or solvate of a salt thereof;

3-Amino-N-(2-morpholin-4-ylethyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-N-[2-(1*H*-imidazol-4-yl)ethyl]-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-N-[3-(1*H*-imidazol-1-yl)propyl]-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}-N-(2-thien-2-ylethyl)pyrazine-2-carboxamide hydrochloride;

3-Amino-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}-*N*-(thien-2-ylmethyl)pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(2-methoxyethyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(3-methoxypyropyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide hydrochloride;

3-Amino-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}-*N*-[3-(2-oxopyrrolidin-1-yl)propyl]pyrazine-2-carboxamide hydrochloride;

3-Amino-*N*-(cyanomethyl)-6-{4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl}pyrazine-2-carboxamide dihydrochloride;

3-Amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-*N*-[2-(1*H*-pyrrol-1-yl)ethyl]-2-pyrazinecarboxamide hydrochloride;

3-Amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-*N*-[2-(methylsulfonyl)ethyl]-2-pyrazinecarboxamide hydrochloride;

*N*-[2-(Acetylamino)ethyl]-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide hydrochloride;

3-Amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-*N*-[2-(2-oxo-1-imidazolidinyl)ethyl]-2-pyrazinecarboxamide hydrochloride;

3-Amino-*N*-[2-(aminosulfonyl)ethyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-2-pyrazinecarboxamide hydrochloride;

or as a free base or an alternative pharmaceutically acceptable salt, solvate or solvate of a salt thereof[:].

8. (Currently amended) A pharmaceutical formulation comprising as active ingredient a therapeutically effective amount of the compound according to any one of claims 1 or [[to]] 7 in association with pharmaceutically acceptable carriers or diluents.

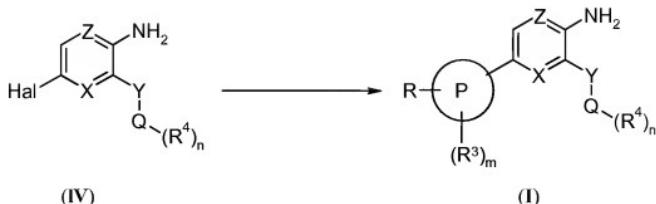
Claims 9 to 16. (Cancelled)

17. (Currently amended) A method of prevention and/or treatment of conditions associated with glycogen synthase kinase-3, comprising administering administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula I as defined in any one of claims 1 or [[to]] 7.
18. (Currently amended) A method of prevention and/or treatment of dementia, Alzheimer's Disease, Parkinson's Disease, Frontotemporal dementia Parkinson's Type, Parkinson dementia complex of Guam, HIV dementia, diseases with associated neurofibrillar tangle pathologies and dementia pugilistica, comprising administering administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula I as defined in any one of claims 1 or [[to]] 7.
19. (Original) The method according to claim 18, wherein the prevention and/or treatment is for Alzheimer's Disease.
20. (Currently amended) A method of prevention and/or treatment of amyotrophic lateral sclerosis, corticobasal degeneration, Down syndrome, Huntington's Disease, ~~postencephalitic~~ postencephalitic parkinsonism, progressive supranuclear palsy, Pick's Disease, Niemann-Pick's Disease, stroke, head trauma and other chronic neurodegenerative diseases, Bipolar Disease, affective disorders, depression, schizophrenia, cognitive disorders, hair loss and contraceptive medication, Type I and Type II diabetes, diabetic neuropathy and diabetes related disorders, comprising administering administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula I as defined in any one of claims 1 or [[to]] 7.

21. (Currently amended) The method according to claim 18, wherein the prevention and/or treatment is of Type I [[and]] or Type II diabetes, diabetic neuropathy [[and]] or diabetes related disorders.

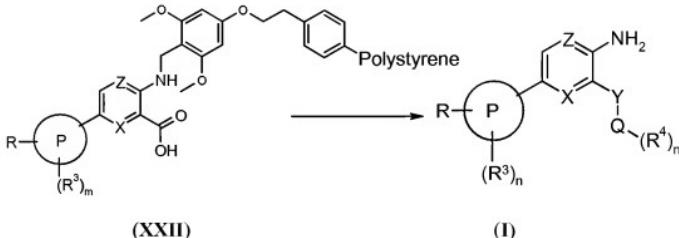
22. (Currently amended) A method of prevention and/or treatment of premented states, Mild Cognitive Impairment, Age-Associated Memory Impairment, Age-Related Cognitive Decline, Cognitive Impairement No Dementia, mild cognitive decline, mild neurocognitive decline, Late-Life Forgetfulness, memory impairment and cognitive impairment, vascular dementia, dementia with Lewy bodies, Frontotemporal dementia and androgenetic alopecia, comprising administering administering to a mammal, including man in need of such prevention and/or treatment, a therapeutically effective amount of a compound of formula **I** as defined in any one of claims 1 or [[to]] 7.

23. (Original) A process for the preparation of a compound of formula **I** according to claim 1, wherein Y, X, Z, P, Q, R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, A, m and n are defined as in formula **I**, comprising de-halogen coupling of a compound of formula **IV** with an appropriate aryl species;



to give a compound of formula **I**.

24. (Original) A process for the preparation of a compound of formula I according to claim 1, wherein Y, X, Z, P, Q, R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, A, m and n are defined as in formula I, comprising reacting of a compound of formula XXII:

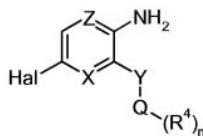


wherein the reaction is being performed by activation of a compound of formula XXII by treatment with a coupling agent or with an acyl halide reagent followed by treatment with the appropriate amine, followed by cleavage of the solid phase moiety by treatment with an suitable acid in a suitable solvent, and where the reaction temperature is between 0 °C and reflux, to give a compound of formula I.

25 and 26. (cancelled)

27. (Original) A compound which is  
4-(Pyrrolidin-1-ylsulfonyl)phenylboronic acid;  
4-[(4-Methylpiperazin-1-yl)sulfonyl]phenylboronic acid;  
as a free base or a salt, solvate or solvate of a salt thereof.

28. (Original) A compound of formula IV



(IV)

wherein

Y is CONR<sup>5</sup>, NR<sup>5</sup>CO, SO<sub>2</sub>NR<sup>5</sup>, NR<sup>5</sup>SO<sub>2</sub>, CH<sub>2</sub>NR<sup>5</sup> NR<sup>5</sup>CONR<sup>5</sup>, CH<sub>2</sub>CO, CO or CH<sub>2</sub>O;

X is CH or N;

Z is N;

Q is C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl or C<sub>2-6</sub>alkynyl;

R<sup>4</sup> is independently selected from halogen, nitro, CHO, CN, OC<sub>1-6</sub>alkylCN, OR<sup>6</sup>, OC<sub>1-6</sub>alkylOR<sup>6</sup>, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>OR<sup>7</sup>, CO<sub>2</sub>R<sup>6</sup>, OC<sub>1-6</sub>alkylCO<sub>2</sub>R<sup>6</sup>, CONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, NR<sup>6</sup>(CO)R<sup>7</sup>, O(CO)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)OR<sup>7</sup>, NR<sup>6</sup>(CO)NR<sup>6</sup>R<sup>7</sup>, O(CO)OR<sup>6</sup>, O(CO)R<sup>6</sup>, COR<sup>6</sup>, OC<sub>1-6</sub>alkylCOR<sup>6</sup>, NR<sup>6</sup>(CO)(CO)R<sup>6</sup>, NR<sup>6</sup>(CO)(CO)NR<sup>6</sup>R<sup>7</sup>, SR<sup>6</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)R<sup>7</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>2</sub>R<sup>6</sup>, NR<sup>6</sup>(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(SO)R<sup>7</sup>,

OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup>, SOR<sup>6</sup>, C<sub>3-6</sub>cycloalkyl, phenyl, a 5 or 6

membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S, or a 5 or 6 membered heterocyclic ring containing one or more heteroatoms

independently selected from N, O, or S which heterocyclic group may be saturated or

unsaturated, and said phenyl ring or 5 or 6 membered heteroaromatic ring or 5 or 6 membered

heterocyclic ring may optionally be fused with a 5 or 6 membered saturated, partially saturated

or unsaturated ring containing atoms independently selected from C, N, O or S wherein any

C<sub>3-6</sub>cycloalkyl, phenyl, 5 or 6 membered heteroaromatic ring with one or two heteroatoms

selected independently from N, O, or S or a 5 or 6 membered heterocyclic ring containing one or

two heteroatoms selected independently from N, O, or S; may be optionally be substituted by

one or more A;

R<sup>5</sup> is hydrogen or C<sub>1-6</sub>alkyl

R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl and C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>6</sup> and R<sup>7</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A and wherein a CH<sub>2</sub> group may optionally be replaced by a CO group;

R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl;

R<sup>8</sup> and R<sup>9</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

Hal is halogen;

n is 0, 1, 2, 3 or 4;

A is halogen, oxo (=O), nitro, CHO, CN, OR<sup>6</sup>, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, C<sub>0-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, CO<sub>2</sub>R<sup>8</sup>, CONR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)R<sup>6</sup>, O(CO)R<sup>6</sup>, COR<sup>6</sup>, SR<sup>6</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>3</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup> or SOR<sup>6</sup>; as a free base or a salt, solvate or solvate of a salt thereof.

29. (Original) A compound according to claim 28, wherein

Y is CONR<sup>5</sup>;

X is N;

Q is C<sub>1-6</sub>alkyl;

R<sup>4</sup> is independently selected from CN, OR<sup>6</sup>, a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms independently selected from N, O, or S, or a 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O, or S which heterocyclic group may be saturated or unsaturated, wherein any 5 or 6 membered heterocyclic ring containing one or two heteroatoms selected independently from N, O, or S; may be optionally be substituted by A;

R<sup>5</sup> is hydrogen;

R<sup>6</sup> is, C<sub>1-6</sub>alkyl;

n is 1;

A is oxo (=O);

as a free base or a salt, solvate or solvate of a salt thereof.

30. (Original) A compound which is

3-Amino-6-bromo-N-(2-morpholin-4-ylethyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-N-[2-(1*H*-imidazol-4-yl)ethyl]pyrazine-2-carboxamide;

3-Amino-6-bromo-N-[3-(1*H*-imidazol-1-yl)propyl]pyrazine-2-carboxamide;

3-Amino-6-bromo-N-(2-thien-2-ylethyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-N-(thien-2-ylmethyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-N-(2-methoxyethyl)pyrazine-2-carboxamide;

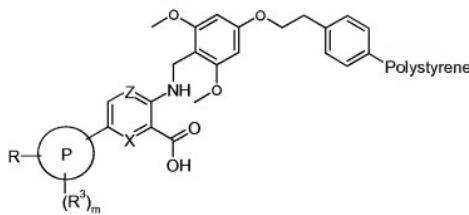
3-Amino-6-bromo-N-(3-methoxypropyl)pyrazine-2-carboxamide;

3-Amino-6-bromo-N-[3-(2-oxopyrrolidin-1-yl)propyl]pyrazine-2-carboxamide;

3-Amino-6-bromo-N-(cyanomethyl)pyrazine-2-carboxamide;

as a free base or a salt, solvate or solvate of a salt thereof.

31. (Original) A compound of formula **XXII**



wherein:

Z is N;

X is CH or N;

P is phenyl or a 5 or 6 membered heteroaromatic ring containing one or more heteroatoms selected from N, O or S and said phenyl ring or 5 or 6 membered heteroaromatic ring may optionally be fused with a 5 or 6 membered saturated, partially saturated or unsaturated ring containing atoms independently selected from C, N, O or S;

R is CHO, fluoromethoxy, difluoromethoxy, trifluoromethoxy,  $C_{0-6}alkyl(SO_2)NR^1R^2$ ,  $OC_{0-6}alkyl(SO_2)NR^1R^2$ ,  $OC_{1-6}alkyl(SO)NR^1R^2$ ,  $C_{0-6}alkylNR^1(SO)R^2$ ,  $OC_{1-6}alkylNR^1(SO_2)R^2$ ,  $C_{0-6}alkylNR^1(SO_2)R^2$ ,  $OC_{1-6}alkylNR^1(SO_2)R^2$ ,  $OC_{0-6}alkylNR^1(SO_2)C_{1-6}alkylNR^1R^2$ ,  $C_{0-6}alkyl(SO)C_{1-6}alkylNR^1R^2$ ,  $OC_{1-6}alkyl(SO)C_{1-6}alkylNR^1R^2$ ,  $C_{0-6}alkyl(SC_{1-6}alkyl)NR^1R^2$ ,  $OC_{1-6}alkyl(SC_{1-6}alkyl)NR^1R^2$ ,  $OC_{1-6}alkyl(C_1-6alkyl)OC_{1-6}alkylNR^1R^2$ ,  $C_{0-6}alkyl(C_1-6alkyl)OC_{1-6}alkylNR^1R^2$ ,  $OC_{1-6}alkylCONR^{10}R^{11}$ ,  $OC_{0-6}alkylCONR^1R^2$ ,  $OC_{1-6}alkylNR^1R^2$ ,  $C_{0-6}alkylNR^{10}(CO)R^{11}$ ,  $OC_{1-6}alkylNR^1(CO)R^2$ ,  $C_{0-6}alkylNR^{11}(CO)R^{10}$ ,  $C_{0-6}alkylCOR^{11}$ ,  $OC_{1-6}alkylCOR^1$ ,  $C_{0-6}alkylNR^{10}R^{11}$ ,  $C_{0-6}alkylO(CO)R^{11}$ ,  $OC_{1-6}alkylO(CO)R^1$ ,  $C_{0-6}alkylC(NR^{10})NR^{10}R^{11}$ ,  $C_{0-6}alkylC(NR^{11})N(R^{10})_2$ ,  $OC_{0-6}alkylC(NR^1)NR^1R^2$ ,  $C_{0-6}alkylNR^{10}(CO)OR^{11}$ ,  $OC_{1-6}alkylNR^1(CO)OR^2$ ,  $C_{0-6}alkylNR^{11}(CO)OR^{10}$ ,  $OC_{1-6}alkylCN$ ,  $NR^1OR^2$ ,  $C_{0-6}alkyl(CO)OR^8$ ,  $OC_{1-6}alkyl(CO)OR^1$ ,  $NR^1(CO)NR^1R^2$ ,  $NR^1(CO)(CO)R^2$ ,  $NR^1(CO)(CO)NR^1R^2$ ,  $OR^{12}$  or  $SO_3R^1$ ; R<sup>1</sup> and R<sup>2</sup> are independently selected from hydrogen,  $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  $C_{0-6}alkylC_{3-6}cycloalkyl$ ,  $C_{0-6}alkylheterocycloalkyl$ ,  $C_{1-6}alkylNR^6R^7$ ,  $C_{0-6}alkylaryl$  and  $C_{0-6}alkylheteroaryl$ , wherein any  $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  $C_{0-6}alkylC_{3-6}cycloalkyl$ ,  $C_{0-6}alkylheterocycloalkyl$ ,  $C_{0-6}alkylaryl$ ,  $C_{0-6}alkylheteroaryl$  may be substituted by one or more A;

R<sup>1</sup> and R<sup>2</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>3</sup> is independently selected from halogen, nitro, CHO,  $C_{0-6}alkylCN$ ,  $OC_{1-6}alkylCN$ ,  $C_{0-6}alkylOR^6$ ,  $OC_{1-6}alkylIOR^6$ , fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy,  $C_{0-6}alkylNR^6R^7$ ,  $OC_{1-6}alkylNR^6R^7$ ,  $OC_{1-6}alkylOC_{1-6}alkylNR^6R^7$ ,  $NR^6OR^7$ ,  $C_{0-6}alkylCO_2R^6$ ,  $OC_{1-6}alkylCO_2R^6$ ,  $C_{0-6}alkylCONR^6R^7$ ,

OC<sub>1-6</sub>alkylCONR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(CO)R<sup>7</sup>, O(CO)NR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)OR<sup>7</sup>, NR<sup>6</sup>(CO)NR<sup>6</sup>R<sup>7</sup>, O(CO)OR<sup>6</sup>, O(CO)R<sup>6</sup>, C<sub>0-6</sub>alkylCOR<sup>6</sup>, OC<sub>1-6</sub>alkylCOR<sup>6</sup>, NR<sup>6</sup>(CO)(CO)R<sup>6</sup>, NR<sup>6</sup>(CO)(CO)NR<sup>6</sup>R<sup>7</sup>, SR<sup>6</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)R<sup>7</sup>, OC<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>3</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, C<sub>0-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>(SO)R<sup>7</sup>, OC<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>6</sup>, C<sub>0-6</sub>alkylSOR<sup>6</sup>, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl, wherein any C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl may be optionally substituted by one or more A;

R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl and C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>6</sup> and R<sup>7</sup> may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S, which heterocyclic ring may be

optionally substituted by A and wherein a CH<sub>2</sub> group may optionally be replaced by a CO group;

R<sup>8</sup> and R<sup>9</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl and C<sub>0-6</sub>alkylheteroaryl;

R<sup>8</sup> and R<sup>9</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

R<sup>10</sup> is hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl or C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>11</sup> is C<sub>1-6</sub>alkylNR<sup>8</sup>R<sup>9</sup>;

R<sup>10</sup> and R<sup>11</sup> may together form a 5 or 6 membered heterocyclic ring containing one or more heteroatoms selected from N, O or S, which heterocyclic ring may be optionally substituted by A;

A is halogen, oxo (=O), nitro, CHO, CN, OR<sup>6</sup>, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, C<sub>0-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, OC<sub>1-6</sub>alkylNR<sup>6</sup>R<sup>7</sup>, CO<sub>2</sub>R<sup>8</sup>, CONR<sup>6</sup>R<sup>7</sup>, NR<sup>6</sup>(CO)R<sup>6</sup>, O(CO)R<sup>6</sup>, COR<sup>6</sup>, SR<sup>6</sup>, (SO<sub>2</sub>)NR<sup>6</sup>R<sup>7</sup>, (SO)NR<sup>6</sup>R<sup>7</sup>, SO<sub>3</sub>R<sup>6</sup>, SO<sub>2</sub>R<sup>6</sup> or SOR<sup>6</sup>;

m is 0, 1, 2, 3 or 4;

as a free base or a salt, solvate or solvate of a salt thereof.

32. (Original) A compound according to claim 31, wherein:

X is N;

P is phenyl;

R is  $C_{0-6}\text{alkyl}(\text{SO}_2)\text{NR}^1\text{R}^2$ ;

$\text{R}^1$  and  $\text{R}^2$  may together form a substituted 5 or 6 membered heterocyclic ring containing one or more heteroatoms independently selected from N, O or S;

m is 0;

as a free base or a salt, solvate or solvate of a salt thereof.

33. (Original) A compound which is

Methyl 3-{[2,6-dimethoxy-4-(2-phenylethoxy)benzyl]amino}-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxylate polystyrene;

3-{[2,6-Dimethoxy-4-(2-phenylethoxy)benzyl]amino}-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxylic acid polystyrene;  
as a free base or a salt, solvate or solvate of a salt thereof.

34. (Cancelled).